

(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property
Organization
International Bureau



(43) International Publication Date
29 December 2004 (29.12.2004)

PCT

(10) International Publication Number
WO 2004/113407 A1

(51) International Patent Classification⁷: **C08F 283/00**,
C08G 77/48, C09D 183/04

San 31 Hyoja-dong, Nam-gu, Pohang-si, Kyungsang-
buk-do_790-784 (KR).

(21) International Application Number:
PCT/KR2004/000316

(74) Agent: **JANG, Seongku**; 19th Fl., KEC Building, #275-7,
Yangjae-dong Seocho-ku, Seoul 137-130 (KR).

(22) International Filing Date: 17 February 2004 (17.02.2004)

(81) Designated States (unless otherwise indicated, for every
kind of national protection available): AE, AG, AL, AM,
AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN,
CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI,
GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE,
KG, KP, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG,
MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH,
PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN,
TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
10-2003-0041384 25 June 2003 (25.06.2003) KR

(71) Applicant (for all designated States except US):
POSTECH FOUNDATION [KR/KR]; San 31, Hy-
oja-dong, Nam-gu, Pohang, Kyungsangbuk-do 790-784
(KR).

(84) Designated States (unless otherwise indicated, for every
kind of regional protection available): ARIPO (BW, GH,
GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW),
Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), Euro-
pean (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR,
GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK,
TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW,
ML, MR, NE, SN, TD, TG).

(72) Inventors; and

(75) Inventors/Applicants (for US only): **REE, Moonhor**
[KR/KR]; Gyosu Apt. F-1903, #756, Jigok-dong, Nam-gu,
Pohang-si, Kyungsangbuk-do 790-390 (KR). **OH, Weon-
tae** [KR/KR]; Department of Chemistry, Postech, San
31 Hyoja-dong, Nam-gu, Pohang-si, Kyungsangbuk-do
790-784 (KR). **HWANG, Yongtaek** [KR/KR]; Depart-
ment of Chemistry, Postech, San 31 Hyoja-dong, Nam-gu,
Pohang-si, Kyungsangbuk-do 790-784 (KR). **LEE,
Byeongdu** [KR/KR]; Department of Chemistry, Postech,

Published:

— with international search report

For two-letter codes and other abbreviations, refer to the "Guid-
ance Notes on Codes and Abbreviations" appearing at the begin-
ning of each regular issue of the PCT Gazette.

BEST AVAILABLE COPY



WO 2004/113407 A1

(54) Title: NOVEL POLYMER AND PRODUCTION OF NANO-POROUS LOW DIELECTRIC POLYMER COMPOSITE FILM
USING THE SAME

(57) Abstract: A star-shaped polymer having an alkoxy silane end group and containing an ether group at the center thereof, which is represented by formula (I), is useful as a pore introducer to obtain a low dielectric silicate polymer film having nano-pores distributed regularly and evenly. The star-shaped polymer is prepared by comprising conducting a ring open polymerization of a cyclic monomer and a polyhydric alcohol, and reacting the resulting polymer with an alkoxy silane compound.